

Union County ANR Newsletter

JULY/AUGUST 2024

UK Martin-Gatton
College of Agriculture,
Food and Environment
Union County
Cooperative Extension Service



Union County Farmer's Appreciation Dinner

JULY 30, 2024

5:00PM SILENT AUCTION OPENS
6:00PM DINNER STARTS

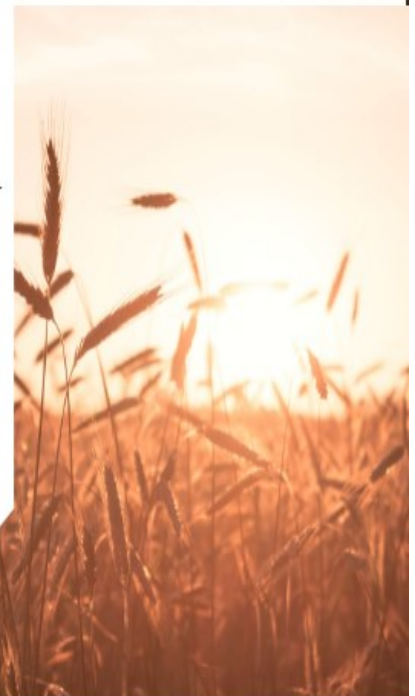
UNION COUNTY EXPO CENTER
125 PRYOR BLVD STURGIS, KY



SPEAKER:
JONATHAN SHELL, KENTUCKY
AGRICULTURE COMMISSIONER

TICKETS \$40.00
TICKETS GO ON SALE JUNE 3, 2024
TICKETS SOLD AT UNION CO EXTENSION OFFICE
1938 US HWY 60W MORGANFIELD, KY

ALL PROCEEDS BENEFIT
UC FRYSC
CHRISTMAS ANGELS



UK Cooperative
Extension Service

Cooperative
Extension Service

Agriculture and Natural Resources
Family and Consumer Sciences
4-H Youth Development
Community and Economic Development

MARTIN-GATTON COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT

Educational programs of Kentucky Cooperative Extension serve all people regardless of economic or social status and will not discriminate on the basis of race, color, ethnic origin, national origin, creed, religion, political belief, sex, sexual orientation, gender identity, gender expression, pregnancy, marital status, genetic information, age, veteran status, physical or mental disability or reprisal or retaliation for prior civil rights activity. Reasonable accommodation of disability may be available with prior notice. Program information may be made available in languages other than English.
University of Kentucky, Kentucky State University, U.S. Department of Agriculture, and Kentucky Counties, Cooperating.



**Cooperative
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University of Kentucky, Kentucky State University, U.S. Department of Agriculture, and Kentucky Counties, Cooperating.
Lexington, KY 40506



Disabilities
accommodated
with prior notification.

Rinse & Return

 Cooperative Extension Service

Plastic Pesticide Container Recycling

July 10, 2024

9AM-11AM

Union Co Road Department



Bring Triple Rinsed Plastic Pesticide Containers For Proper Disposal

For More Information Contact Katie Hughes ANR, Agent 270-389-1400 or katie.n.hughes@uky.edu

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Union County Farm City Tour

Union County is a diverse and prosperous agricultural county which benefits our county as a whole, and not just those working in agriculture.

Everyone is welcome to come learn and see the operations that will be on this year's tour!
This tour is free to attend!!

August 9, 2024

8-8:15AM Meet at the Union County Extension Office (1938 US HWY 60W Morganfield)

8:15-11:45AM Tours

12PM Free lunch at the Union County Extension Office

RSVP By July 26, 2024

To the Union Co Extension Office 270-389-1400

For more information contact Katie Hughes, Union Co ANR Agent katie.n.hughes@uky.edu or 270-389-1400

Join the Union Co Extension Office and Morganfield Lions Club for the Farm City Tour! This is a driving tour, but if you would like to attend but don't want to drive we will have transportation available for the tour.

 Cooperative Extension Service

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FARMER APPRECIATION DINNER SHIRT



All proceeds go to Union County Family Resource Youth Service Center (FRYSC)~ Christmas Angels

Price: Youth to Adult XL \$15.00 (2XL-3XL: +\$2.00)

You can also come by the Union County Extension Office to place order. Make checks payable to Union County Soil Lab.

Order By: July 8, 2024

Name	Phone #	Size	Price

Total:

Drivers of Commodity Prices: Seasonality Dr. Grant Gardner, UKY Ag Eco Specialist

Since the onset of COVID, agricultural commodity charts have resembled the track of a roller coaster, with huge peaks and valleys. During the 2023/24 marketing year, commodity prices have transitioned downward. We can likely expect less volatile commodity prices as prices level out. In a less volatile price environment, marketing decisions are made easier by focusing on fundamental drivers of prices. In my first article on drivers of commodity prices, I focus on [exports](#). This article, the second in a Department of Agricultural Economics' *Economic and Policy Update* series, focuses on seasonality and how it can inform marketing decisions.

At its base, seasonality indicates that commodity prices are typically lower at harvest. Lower harvest time prices are typically caused by the large influx of supplies at harvest. In this article, I use average monthly price indexes to determine soybean seasonality for the 2010s, indicating that May, June, and July are often the best times to pre-market soybeans. I additionally compare May and October sales using November Soybean futures and suggest that a sale in May has returned \$1.15/bu more on average than an October (harvest time) sale.

As we move away from supply and demand shakeups such as COVID-19 and the Russia-Ukraine invasion, I expect seasonal prices to reflect those of the 2010s. Inspecting the seasonal average from 2010-2019 indicates that cash prices increased at harvest only 20% of the time. Figure 1 shows the average monthly price index of Kentucky soybean cash prices for 2010-2019 compared to 2010/11 and 2019/20, the only two years prices increased at harvest. As expected, the average index indicates prices increase through July before decreasing at new crop harvest. On average, the best time to sell soybeans is July; however, this is not always the case. For example, in five of ten years, the monthly index peaked in May or June, making those the better months to market soybeans than July in some years.

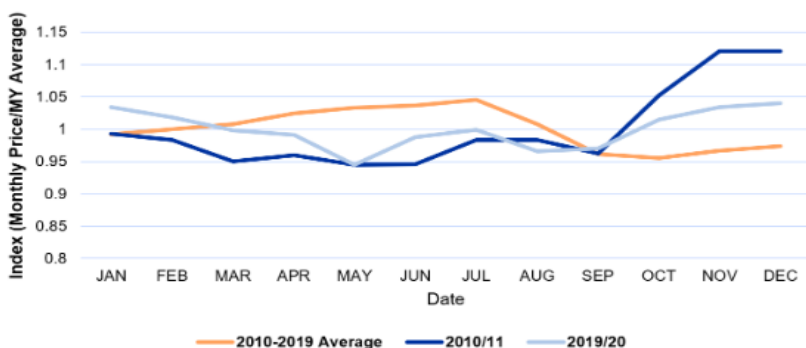
In comparing seasonality in pre-harvest marketing, I compare November soybean futures on May 15 and October 15. Results can be seen in Table 1. I chose May 15 because prices become more volatile in June and July due to weather challenges. Even though prices are higher on average these months, looking at the price for one day could be a poor indicator of price. Through the 2010s, futures prices were higher on May 15 60% of the time; however, through 2023, which includes COVID and the Russia-Ukraine invasion, prices were only higher in May 50% of the time. The more important part of this analysis indicates that price increases in May far outweigh declines in May. The average decline from May 15 to October 15, found by averaging the negative (red) numbers in column four of Table 1, results in an average loss of \$1.15 per bushel. The average increase, found by averaging the positive (black) numbers in column 4 of Table 1, is \$2.35, indicating an average gain of \$2.35 when prices increase. Thus, even though prices were higher on May 15 only 50% of the time, always marketing on May 15 would result in an average \$0.50/bushel gain.

Seasonality is a huge aspect of grain marketing and should inform all grain marketing decisions. As basic economics suggests, prices decline when supply is high, and in the United States, supply peaks at harvest. Seasonal averages indicate that the highest soybean prices typically occur in May, June, and July. These months are likely the time to lock in the highest prices when pre-harvest marketing soybeans.

Table 1: Comparison of May 15 and October 15 Futures

Year	May 15	October 15	Change
2010	\$9.25	\$11.52	-\$2.27
2011	\$13.90	\$12.42	\$1.48
2012	\$13.96	\$14.79	-\$0.83
2013	\$15.70	\$12.63	\$3.07
2014	\$14.82	\$9.31	\$5.51
2015	\$9.48	\$8.86	\$0.62
2016	\$10.32	\$9.30	\$1.02
2017	\$9.28	\$9.48	-\$0.20
2018	\$9.82	\$8.24	\$1.58
2019	\$8.59	\$9.34	-\$0.75
2020	\$8.45	\$10.62	-\$2.17
2021	\$14.00	\$12.17	\$1.83
2022	\$15.12	\$13.83	-\$1.29
2023	\$12.31	\$12.86	-\$0.55

Figure 1: Seasonal Patterns of Kentucky Cash Soybean Prices: 2010-2019 Average vs 2010/11 and 2019/20



Animal Disease Traceability Rule Part 2: Ear Tags

Dr. Michelle Arnold, Ruminant Extension Vet, UKY

The new Animal Disease Traceability (ADT) rule, entitled “Use of Electronic Identification (EID) Ear tags as Official Identification in Cattle and Bison”, was published in the Federal Register on 5/9/2024 and will be effective on 11/5/2024. This final rule, available at <https://www.regulations.gov/document/APHIS-2021-0020-2011> is an amendment to the animal disease traceability regulations already in place as of January 2013. One stipulation in the new rule requires eartags to be both visually and electronically readable to be recognized as official eartags for interstate travel for cattle and bison covered under the regulations. This final rule does not require exclusive use of eartags; the regulations continue to list eartags as one of several forms of authorized official identification, which also include tattoos and brands when accepted by State officials in the sending and receiving States. This article will address questions about eartag differences with regards to the new rule. For more in-depth information, there is a new guidance document entitled “OFFICIAL ANIMAL IDENTIFICATION NUMBER (AIN) DEVICES WITH THE “840” PREFIX”, published 5/14/2024, available at <https://www.aphis.usda.gov/media/document/64512/file> .

What does it mean that an official tag must be “visually and electronically readable” for interstate travel? Are the RFID “button tags” considered visually readable or will flop tags/panel tags be required?

All tags must be readable in cattle, but USDA now has device readability standards, both electronic and visual standards, that must be met by tag manufacturers to obtain approval for official identification purposes that meet interstate travel requirements. In Version 3.0 of the ADT Device Standards, released 9/21/2023, the specifications are described in detail regarding readability:

Electronic ID eartags are required to be visually readable for a person with 20/20 vision (arm’s length) viewing from two-and-a-half feet (30 inches). RFID button tags meet this standard, so a panel tag is not required in order to be “visual”.

All official identification numbers must be imprinted at a minimum height of 5 mm (0.2 inches) on a bright, contrasting background. An exception may be made for small EID ear tags that do not allow the imprinting of the official identification number at 5 mm but are clearly read at the required distance.

For 840 tags, a space must be inserted after each third digit of the animal identification number (AIN) imprinted on the tag (for example, 840 003 123 456 789).

The font for all characters for required information imprinted on the tag must be Arial. APHIS must approve any different font.

Electronic ID eartags can also be read using an RFID reader. This reader sends a radio signal of a specific frequency to the eartag and records the number that comes back from the eartag. Once a signal is received from the reader, the eartag transmits the identity of an animal in the form of a unique 15-digit sequence of numbers. The 15-digit sequence begins with the country code (e.g., 840 for US born animals), followed by 003, then 9 unique digits. Official USDA-APHIS electronic eartags have no batteries or active transmission of information but are often categorized by the radio frequency range they use to communicate, either low (LF) or ultrahigh frequency (UHF). Low frequency tags have a shorter read range and only one tag can be read at a time. The transponders must be reliably machine read at a rate of 95 percent as cattle move by in a single file passage at 4 mph. UHF has an extended read range of up to 30 feet, faster data transfer, and is better suited to capturing load lots of cattle. UHF transponders must be reliably machine read at a rate of 95 percent at the read distance designated by the device manufacturer.

Why the push for both visually and electronically readable official tags?

Reading eartags electronically does not require restraint of animals because animal identification information is captured almost instantaneously by scanning the eartag with a reader. Once the tag is scanned, the tag number may be rapidly and accurately transmitted to a connected database. Electronic databases store only data associated with an eartag number that is necessary to perform traceability of animals; no business practices or other financial or competitive information is obtained or stored. Electronic eartags help animal health officials more quickly locate the records associated with an animal during a disease trace to identify the origin of the animal. If the animal was tagged with an electronic eartag, the tag distribution records are stored in APHIS’

Animal Disease Traceability Rule Part 2: Ear Tags, Continued:

Animal Identification Number Management System database (AIMS), which is easily accessible to animal health officials and provides the starting point for the trace. However, if visual only tags have been used, the animal usually must be restrained to allow the ear tag number to be read and recorded. Often, the ear tag must be cleaned before the number can be read. The ear tag number is then recorded on paper or manually entered in a database and errors can occur while reading, transcribing, or entering the ear tag numbers. If the animal was tagged with a visual (non-electronic) ear tag, there is no centralized tag distribution database and obtaining records often requires a lengthier search and further verification.

This final rule does not require producers or livestock markets to have electronic reading equipment or additional data management systems, because the official electronic ID tags must be readable visually as well as electronically. It is important to remember that producers should not sell, loan, or give tags they have purchased to other producers, because all 840 ID tags they have purchased are recorded as being distributed to them using the location identification system (Premise ID) used by their State. APHIS maintains an Animal Disease Traceability webpage with direct access to the Final Rule, FAQs, how to obtain free electronic ID tags, and other resources at <https://www.aphis.usda.gov/livestock-poultry-disease/traceability>.

RFID tags were previously categorized as either “Low Frequency” (LF) or “Ultra-High Frequency” (UHF). This final rule now uses the acronym “EID” instead of “RFID” and refers to EID tags as “HDX” or “FDX”. What happened?

The new rule refers to electronic identification (EID) tags rather than radio frequency identification (RFID) tags to recognize the possibility of other electronically readable technology that may become available in the future. Electronic ear tag technology can be categorized by the way information is transferred between the tag and reader, either “Half Duplex” (HDX) or “Full Duplex” (FDX). HDX tags are heavier, they transmit information one way at a time, they are better able to transmit through interference such as metal objects, they have the strongest read range, and are slightly more expensive than FDX. FDX ear tags are lighter in weight, they transmit information continuously but are more susceptible to interference from metal objects and fluorescent lights, and they have a shorter read range. Both technologies work well and have similar qualities but have different strengths and capabilities so the choice depends on where and how it will be used (see Figure 1). Regardless of type, all electronic ID tags must be approved by USDA and meet standards for quality and performance, be tamper proof, contain a unique ID, the words “Unlawful to Remove” and display the U.S. official ear tag shield. Both HDX and FDX tags follow the ISO standard and can be read by the same readers.




	Half Duplex (HDX)	Full Duplex (FDX)
		
Type	Global (982) and USDA (840)	Global (982) and USDA (840)
Size	HDX Tag weight: 8.9 grams	FDX Tag weight: 5.6 grams
Color	White	Yellow
Tamperproof Cap	Yes - Tamperproof Ultra Cap provides ultimate security and retention	Yes - Tamperproof Ultra Cap provides ultimate security and retention
Button Back Included	Yes - Extended Male Button Back	Yes - Extended Male Button Back
Read Range	15" - 18" - HDX technology optimizes signal transmission and provides greatest possible read distance	13" - 16" - FDX technology is sufficient for capturing data, if read range is not an issue
ISO Compliant	Yes	Yes
Matched Pair Option	Yes	Yes
RFID Reader	All ISO compliant readers including Allflex AWR300, RS420, LPR, and Tri-Test RFID Readers	All ISO compliant readers including Allflex AWR300, RS420, LPR, and Tri-Test RFID Readers
Allflex Applicator(s)	Universal Total Tagger, UTT3S, Total Tagger Plus and EID Ultra Retractable	Universal Total Tagger, UTT3S, Total Tagger Plus and EID Ultra Retractable
Comments	Works well in all operations. Best and strongest read range	Works well for most operations. FDX tags are more susceptible to interference from metal and steel objects such as head gates, panels, and squeeze chutes as well as fluorescent lights.

Figure 1: A comparison of HDX and FDX tags, courtesy of Allflex. Accessed 6/6/2024 at <https://www.livestocktags.com/blogs/learning-center/allflex-electronic-id-tag-comparison>

HDX tags talk to the reader like a 2-way radio; the reader sends out a signal then the tag replies. A half-duplex RFID reader generates short magnetic pulses that wirelessly charge a capacitor inside an HDX tag. When the charge field turns off, the tag uses the stored power to send the tag number back to the reader without interference from the reader. HDX uses Frequency Shift Keying (FM) which has better noise immunity and allows larger, simpler antennas. Since the charge field is pulsed, HDX readers require less power. Half Duplex (HDX) tags are (generally) white in color. They are better suited to transmit through metal interference such as metal and steel objects. Typical read range on HDX tags ranges from 15" - 18".

FDX is like a phone conversation: as soon as the tag receives the reader signal both tag and reader talk simultaneously. A full duplex RFID reader generates a continuous magnetic field which powers the tag to respond immediately. Tags repeat their message while powered by the field, up to 30 times per second. FDX tags can be made very small and thin due to their simple construction of a coil, ferrite rod and a chip. Very small tags

have a short read range and so are primarily used for hand scanning. FDX uses Amplitude Shift Keying (AM) and is susceptible to atmospheric noise which limits antenna sizes. Full Duplex (FDX) are (generally) yellow in color and are good when the read range is short (13" - 16"). FDX tags are more susceptible to interference from metal and steel objects such as head gates, panels, and squeeze chutes as well as fluorescent lights.

Animal Disease Traceability Rule Part 2: Ear Tags, Continued:

What is the difference in cost between HDX and FDX tags?

The cost of EID official identification tags varies by tag type and quantity purchased. USDA performed a market analysis in 2022 and found the cost per FDX tag ranged from \$2.00 for large quantities (5,000 more) to \$3.45 for smaller quantities (20 tags). The advertised retail price per HDX tag in August 2022 ranged from \$2.32 for large quantities (5,000 or more) to \$3.65 for small quantities (20 tags).

Depending on the tag type, many vendors that handle official ID tags offer volume discounts and free shipping for large orders.

When shopping for USDA-approved tags, manufacturers offer “visual tags”, “RFID tags” (FDX and HDX), and “RFID with visual matched (paired) sets”. Are “visual” tags with no electronic or RFID component still official?

The minimum identification standard in cattle is the visual 840 tag. For visual-only tags, the entire official identification number must be imprinted on the portion of the tag inside the animal’s ear. This will suffice *if the cattle never leave the state of origin within their lifetime*, however, interstate travel requires a tag with electronic capabilities. For electronic ID tags, the entire 15-digit official identification number beginning with 840 must be imprinted on the portion of the tag containing the transponder (see Figure 2). Be aware that manufacturers still sell tags beginning with 900 numbers used for in-herd data use only and cannot be used as Official ID.



Figure 2: Commerce Compliant ADT (Allflex). Accessed 6/6/2024 at https://www.allflex.global/na/wp-content/uploads/sites/7/2022/04/Commerce-Compliant-ADT_ADP003_R6.pdf

Many of the new tags display a data matrix; what comes up when scanned with a cell phone?

The 2D Data Matrix that conforms with the ECC200 Data Matrix protocol must be imprinted on the portion of the tag that contains the transponder in a square approximately 5mm x 5mm and should be a two-dimensional representation of the official animal number imprinted on the tag. Readability (percent of data matrix read) on new tags being shipped from the manufacturing plant must be at 100 percent when read with a camera-based image reader (bar code reader).

Recommended EID Tag Placement



Application site must be free of foreign debris prior to placement of tags on the animal. Review application instructions prior to tagging.

IMPORTANT: Caution, “Two All Spots” is critical for proper healing and retention. Inspect placement after tagging to ensure there is sufficient space between ear and EID tag.

1. The EID tag should be placed vertically, in the middle of the ear between the two cartilage ribs and 2/3 from the outside edge of the ear, 1/3 from the head. (Application too deep in the ear is not recommended).
2. The female portion of the tag should be on the inside of the ear with EID tag application. Note that this is a thicker part of the ear. Application may be more difficult than when applying a visual tag.

Accurate records of tags received and applied are required to be kept for a minimum of 5 years from the time the animal moves off farm, changes ownership, or dies.

This record should include:

- Date and listing of tag numbers received
- Date tag was applied with description of animal (sex, breed, other ID, distinguishing marks, color)
- Date the animal moved off farm with movement documents if needed
- Date animal sold along with name, address, and contact information of the buyer

Figure 3: Recommended Application Instructions for Allflex RFID Tags. Accessed 6/6/2024 at <https://www.cattletags.com/blog/learning-center/how-to-apply-allflex-eid-eat-tags>

Has anything changed with this new rule regarding which cattle are required to have “official identification” when moving interstate?

No changes have been made with this new rule. For cattle, the following animal classes must be identified with official ID ear tags, both visually and electronically readable, beginning November 5, 2024, when moving interstate:

All sexually intact cattle and bison 18 months of age or over.

Cattle and bison of any age used for rodeo, shows, exhibition, and recreational events.

All dairy cattle, regardless of age or sex or current use.

All offspring of dairy cattle, including Beef on Dairy cross bred cattle.



Figure 4: For those producers nostalgic for metal tags, Sharewell Data Ltd is the first company in the world to offer an official metal EID tag for cattle, that combines the durability of a metal tag with the reliability and RFID capabilities of an EID tag. <https://sharewell.com/met-tag-metal-cattle-rfid-tag-official>

The requirement for individual identification does not include beef feeder cattle, nor any cattle or bison moving directly to slaughter.

Corn, Soybean & Tobacco Field Day

UKREC, Princeton KY 42445

Wagons roll: 8:00am CT

Topics include:

Corn Disease Concerns For 2024

Familiar and New Soybean Diseases to Look Out for in 2024

Insect Update

Corn and Soybean Variety Trials

Weed Control in 2024 And Beyond

“Weather Alert”

Maximizing Corn Yields Following a Cover Crop

Soybean yield and economic response to irrigation

Corn and Soybean Outlook

The Fundamentals of Soil pH Management for Production Agriculture

Changes To Agr-1 Fertilizer Rate Recommendations for Kentucky Grain Crops

UKREC Dark Tobacco Infrastructure and Research Update

Tobacco Research Update from University of Tennessee

Sulfur Fertility in Tobacco



Registration: <http://tiny.cc/m9jlyz> Or scan the QR Code

Thanks to our lunch sponsors!



Sourdough Bread Starter Class

August 12, 2024

5:30PM

Union Co Extension Office

Cost is \$8/person

This is a part of the
Homesteading Series.
Spots are limited for this
class.

Payment is due by:
August 5, 2024
to the Union Co Extension Office
(1938 US HWY 60W Morganfield)
**PAYMENT MUST BE RECEIVED
TO SAVE A SPOT!**

For More Information Contact:
Katie Hughes, ANR Agent
katie.n.hughes@uky.edu
270-389-1400

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University of Kentucky, Kentucky State University, U.S. Department of Agriculture, and Kentucky Counties, Cooperating
Lebanon, KY 40506



Upcoming Events

FRYSC BACK TO SCHOOL BLITZ

July 15 8AM-4:30PM

Sign Ups

Extension Office

Contact your School FRYSC FMI

2024 CPH60 Sale Dates

Aug 8 and Dec 5

KY STATE FAIR

Aug 15-25, 2024

Field Crop Pest Management and Spray Clinic

August 29

For more information contact Lori Rogers

270-365-7541 ext. 21317

Apple Butter and Butter Making Class

Sept 17

5:30pm

More Information To Come

Pumpkin Succulent Class

Oct 2 & 3, 2024

More Information To Come

Bull Evaluation Clinic

Stone Veterinary Clinic

More Information To Come

Regional Grazing Field Day

Nov 16, 2024

More Information To Come

Union Co Bull Sale

Feb 22, 2025

More Information To Come

Attending this meeting will get additional points on application!

CAIP INFORMATIONAL SESSION

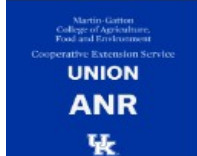
July 29, 2024 at 5:00PM
Union County Extension Office

This session will include information on The County Agricultural Investment Program (CAIP) that provide Kentucky agricultural producers cost-share assistance on practices that increase net farm income and opportunities to try new/innovative technologies or systems that improve farm efficiency and productivity.

Applications will be available at the meeting.

Applications cannot be picked up before July 29, 2024 and are due no later than August 26, 2024.

For more information contact
Union Co Conservation District (Debbie Eubank): 270-389-2393
or
Union Co Extension Office (Katie Hughes): 270-389-1400



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University of Kentucky, Kentucky State University, US Department of Agriculture, and Kentucky Cooperative Extension.
Lexington, KY 40506



Union County Conservation District

MONEY FOR FARM IMPROVEMENTS



Eligible Investment Areas:

- Agricultural Diversification
- AgTech & Leadership Development
- Large Animal - Small Animal
- Farm Infrastructure
- Fencing & On-Farm Water
- Forage & Grain Improvement
- Innovative Ag. Systems
- On-Farm Energy
- Poultry & Other Fowl
- Value Added & Marketing

Administered by
Union County Conservation District
719 US HWY 60E
Morganfield, KY 42437
(270) 389-2393
debbie.eubank@ky.nacdnet.net

COUNTY AGRICULTURAL INVESTMENT PROGRAM (CAIP)

Applications are available for Union County's CAIP to assist farmers in making important farm investments.

Application Period:

July 29- August 26, 2024

No applications will be accepted before July 29, 2024 or after August 26, 2024

Application Availability:

Union County Conservation District Office
Monday – Friday (8 a.m. – 4:00 p.m.)
Return **COMPLETED** Application to:
Union County Conservation District
Monday–Friday (8:00a.m.– 4:00p.m.)

For More Information:

Contact **Debbie Eubank** at (270) 389-2393

All applications are scored, based on the scoring criteria set by the Kentucky Agricultural Development Board.

UK Launches New “Weather Alert” Smartphone App

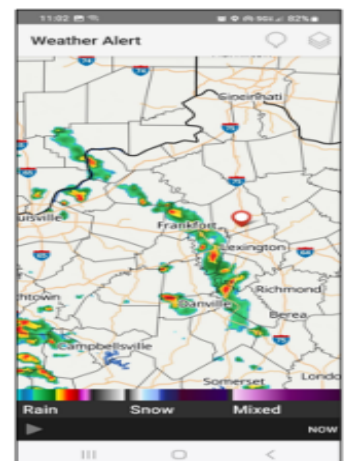
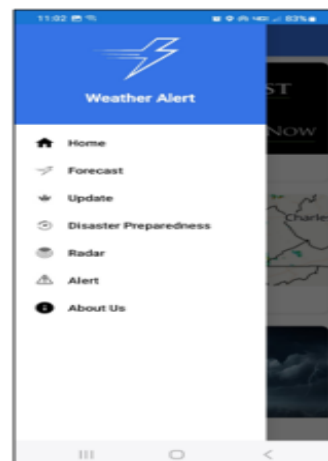
Matthew Dixon, UKY Senior Meteorologist

I'm excited to present a new smartphone app called "Weather Alert", developed in collaboration between the UK Ag Weather Center, UK Center for Computational Sciences, and Southeastern Center for Agricultural Health and Injury Prevention (SCAHIP). The goals of this app are two fold: to heighten awareness during extreme weather conditions and secondly, to empower Kentucky farming operations with valuable insights for management and production-related decisions.

Made possible through support from Smith-Lever/Land Grant Engagement funding, SCAHIP, and the UK Department of Biosystems & Ag Engineering, the initial phase of app development is now COMPLETE. This includes a user-friendly design for easily accessing current and forecast weather data, including a high-resolution radar interface. This app also seamlessly integrates the ability to deliver timely warning and watch alerts directly to your mobile device, all accessible through your phone's GPS location or other designated areas of interest. UK Launches New "Weather Alert" Smartphone App The app can be accessed for each platform by scanning or clicking the QR codes below



Phase two of app development will start in the coming weeks, where tools from the Ag Weather Center will be updated and modernized to create a GPS-enabled, county-by-county ag weather product for the Bluegrass State. We'll then turn our attention to disaster readiness in phase three, focusing once again on a county-by-county product. Last but not least, this app is completely FREE with NO ADS! One of the best compliments I received a few weeks ago was from a farmer in Boyle County. She mentioned that this is the first weather app she could use in her rural location that doesn't bog down because of ads! Please share with friends and family! While the focus is on the state of Kentucky, you can utilize this app anywhere across the United States. I've included some screenshots of the iOS version below for reference. As mentioned above, this app is being completed in three phases, and I'm more than open to suggestions and comments as we move forward in development. You can send those to our email at [weather.alert@uky.edu]. Ultimately, the goal is for this app to be your go-to source for your ag weather needs and staying weather aware! [Biosystems & Agricultural Engineering](#) | [University of Kentucky College of Engineering \(uky.edu\)](#)





Don't let summer end your harvest! July is the time to plant some of your favorite cool-season veggies like kale, carrots, and corn!

Find the best-kept gardening secrets by checking out Extension Publication ID-128---> <https://www2.ca.uky.edu/agcomm/pubs/ID/ID128/ID128.pdf> or stop by the office to pick up a copy.

GET READY FOR YOUR FALL GARDEN!

Want to extend your harvest into fall? July is the prime time to plant fall favorites like broccoli, kale, and corn! Learn more secrets to fall gardening in Extension Publication ID-128!

VEGETABLE	DATE OF PLANTING	HARVEST
Beets	July-Mid August	October
Broccoli	July-August	September-November
Carrots	July-August	November
Collards	July-August	October-November
Kale	July-August	September-November
Rutabaga	July- Mid August	October-November
Sweet Corn	July	September

An Equal Opportunity Organization.

SOIL TESTING

Did you know soil testing is available to every Kentucky citizen through UK Cooperative Extension?

What is Soil Testing?

- Soil testing is a chemical analysis that provides valuable insights into what your soil needs to be more productive.

How does it work?

- Soil samples are collected at all of our 120 cooperative extension offices and sent to a laboratory for testing.

Why Soil Test?

- Identify previous cropping history
- Show losses of surface soil through erosion
- Provide a guideline for lime and fertilizer needs of the soil
- Analyze pH, phosphorus, potassium, calcium, magnesium, zinc, and CEC of soil.

Get your soil tested with UK Cooperative Extension!

Soil testing is free for Union County Residents by the Union County Extension District Board. For more information contact Union County Extension Office at 270-389-1400 or email katie.n.hughes@uky.edu

Learn more by contacting your local county cooperative extension office or check out UK Extension publications AGR-1, AGR-16, and AGR-57.

An Equal Opportunity Organization.

TNC Cover Crop Equipment Cost Share Program

Zach Luttrell, Ag Director for the Nature Conservancy in KY and TN

I'm the ag director for The Nature Conservancy in Kentucky and Tennessee. And I just wanted to let you know about a first of its kind project that we are leading with NRCS as our partner.

We are working with specific equipment dealers in KY to provide farmers cost share on equipment that addresses the capacity/logistical hurdles of planting cover crops during busy harvest seasons in the fall. This cost share is 70% of the cost of the equipment, up to a \$15K may per farmer. The project area is shown below in the map, and there is a 500 acre minimum row crop operation size to qualify.

With planting season winding down, I just wanted to get this on your radar in case you might be interested.

TNC is offering an equipment cost-share program to support implementation of cover crops. Interested farmers can reach out to Zach directly or to the following participating equipment dealers:

Big H Ag Supply in Philpott, KY (near Owensboro)

Jesse Horn (owner)

270-302-7653

jesse@bighagsupply.com

Zach Hatcher

270-231-0959

zhatcher@bighagsupply.com

Belle's Implement in Benton, KY

Ben Jernigan

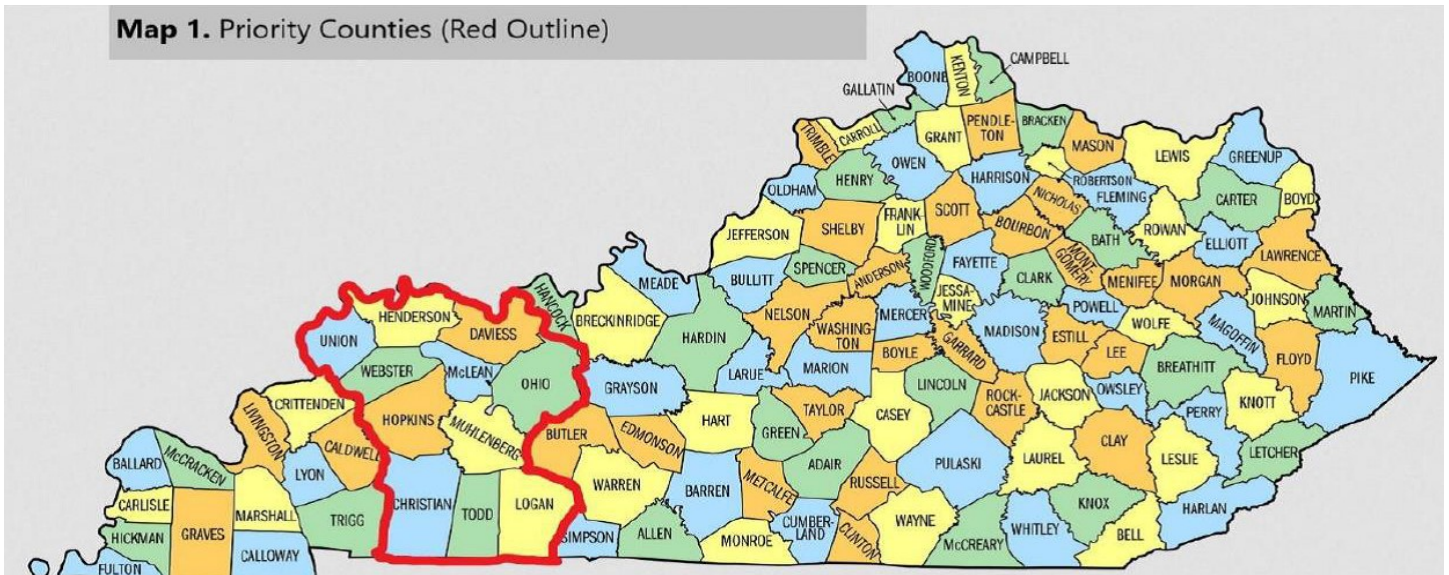
270-493-0408

bellesimplementsllc@gmail.com

Or Contact Zach Luttrell

901-833-8454 or at Zachary.luttrell@tnc.org

Map 1. Priority Counties (Red Outline)



Will the Corn Population Treadmill Ever End?

Dr. Dennis Egli, UKY Professor Emeritus

Corn populations are always increasing. Farmers growing open-pollinated varieties in the 1930's planted 4,000 to 8,000 seeds per acre and produced yields in the 20-bushel range. Populations today are usually above 30,000 plants per acre while yield contest winners often report populations above 50,000 plants per acre.

Why have corn populations consistently increased over the years? The short answer is that higher yields are associated with higher populations - but why does this association exist? To answer this question, we have to go back to the basics and consider the universal yield equation. This equation divides yield into its two components – the number of kernels (seeds) per acre and the weight per kernel (seed). Any increase in yield of any grain crop must come from increases in either or both of these components.

It turns out that most of the yield increase in corn (and soybean) since the 1930's was associated with an increase in kernels (seeds). Weight per kernel (seed) made a much smaller contribution, principally as a result of longer seed-filling periods. So now the question is – how did the corn plant increase the number of kernels to produce higher yield? Studies have shown that ear size (kernels per ear) did not increase much as yield increased during the hybrid era. Increasing population (ears per acre) was the only way that kernel number could be increased. More plants (ears) were needed to produce the kernels required for higher yield because the corn plant is not flexible. There was no other option.

The ancestors of corn and early corn varieties were flexible – they produced ear-bearing tillers and multiple ears on the main stem, but variety improvement over the years got rid of most of this flexibility. Most modern hybrids produce only a single ear on the main stem, even though there are ear primordia at all nodes below the ear. An occasional hybrid will produce a second ear at low populations or in highly productive environments (i.e., they are prolific). Old-time corn breeders often commented that they made their selections at high populations which would not select for multiple ears, increases in ear size or weight per kernel. Comparing the response of corn (inflexible) and soybean (flexible) perfectly illustrates the relationship between plant population and flexibility.

Corn populations have gone up steadily since the beginning of the hybrid era, while soybean populations either haven't changed or, in recent years, actually decreased as seed prices increased. The yield increase of both species was associated with an increase in kernels (seeds) per unit area, but soybean is flexible and can increase seeds per plant by branching (more nodes), increasing flowers per node, and perhaps decreasing flower and small-pod abortion. None of these mechanisms are available to the corn plant, so the producer has to increase population to accommodate the extra kernels needed for high yield. The relative rate of yield increase of the two species is the same despite their drastic differences in flexibility. Inflexibility results in a crop that is harder to manage than a flexible crop (e.g., soybean). Maximum corn yield requires the correct population, uniform spacing of plants in the row and uniform emergence. Flexible crops produce the same yield over a range of populations and don't require uniformity because the dominant plants (wider spacing or early emergers) can increase seed numbers to make up for the loss on the dominated plants (narrow spacing or late emergers) so that yield is not affected. Corn cannot do this. Increasing corn population to support the super-high yields of the future will eventually create management problems.

A yield of 350 bu./acre will require (applying the universal yield equation and assuming a kernel size of 75,000 kernels/bushel, 500 kernels per ear and 1 ear per plant) a population of 52,500 plants/acre which translates into 3 plants per foot in a 30-inch row (4 inches between plant centers) which doesn't leave much space between plants. Eventually, there will not be enough space in the row to accommodate ultra-high populations. Narrower rows or twin-rows may be necessary. The population treadmill in corn will continue as long as yields continue to increase, as a result of more kernels, and the corn plant does not change (larger ears, more flexibility). A greater reliance on longer seed-filling periods or greater prolificacy could eventually slow the treadmill. The bottom line is that the population treadmill will likely continue for the foreseeable future. But don't forget that "prediction is very difficult, especially if its about the future" (Niels Bohr, physicist).



Keeping Birds Away from Ripening Small Fruits

Birds that feed on ripening small fruit can be a problem for homeowners with plantings of blueberries, raspberries, blackberries, gooseberries, currants, and grapes.

The following techniques may be effective in keeping them away! Birds will eventually become accustomed to scare devices, so repositioning them frequently is necessary.

- Use bird scare balloons with large eyes on the sides
- Place rubber snakes or owls around plants
- Hang aluminum pie pans or old CDs that blow in the breeze
- Have reflective tape over and around the plants
- Use exclusion netting

*Source: Delia Scott, Department of Horticulture Extension Associate
An Equal Opportunity Organization.*

PERENNIAL



Perennials come back and grow every year.
Examples: Strawberries, lavender, purple coneflower, hollyhock, mint, onion, milkweed, etc.

VS

ANNUAL



Annuals die off when it gets colder, meaning they must be replanted yearly.
Examples: Zinnias, watermelon, corn, wheat, peas, rice, sunflowers, etc.

*Source: Extension Publication HO-102
An Equal Opportunity Organization.*

Estate Transition Planning

Dr. Charley Martinez and Kevin Ferguson, University of Tennessee

The University of Tennessee Institute of Agriculture hosted the 2024 Beef Improvement Federation Conference two weeks ago. One session that spurred on great conversations was estate transition planning and what that entails. Table 1 displays the Southern Ag Today states and the age break downs of total producers. Kentucky has the highest percentage of producers that are under the age of 35 (10%). For the age range of 35 years to 64 years, all states have over 50% of their producers in this category. But, six states (TX, VA, MS, GA, SC, and FL) have 40% of their producers in the 65 years of age and older category, with Mississippi having the highest percentage at 42%. Farm management is often thought about only from a financial performance (income statement, balance sheet, cash flow statement) standpoint, but sound farm management also includes planning for the future, including estate and management transitions.

A large number of producers in the Southern region are potentially nearing retirement or are over the age of 65 years. This would suggest that estate transition planning should start becoming a priority. If the goal of the farm is to stay a farm, then at some point in the future, the farm will change hands. Transition planning can become a huge task if no plan has ever been thought about or developed. Often, producers indicate that they don't know where to start. That is understandable. Thus, a good starting point could be, "What is adequate retirement income?" Building upon this question could solve questions like: "What are my lifestyle costs? Will costs change in retirement (life care)? How much income will come from social security, pensions, savings, investments, and the farm?" Each farm is different and has diverse challenges like trusts, multiple families/individuals in the operation, debt amounts, urban encroachment, and many more.

However, starting the conversation is the most important step for everyone involved in the process. The key to this falls on the shoulders of the parent(s). Not only is it awkward for the child, or children, to start this conversation, but if there are multiple children and one takes the lead, it can have unintended consequences. But just initiating the conversation is the start. Throughout the process, there are many tools that can be utilized: a will, power of attorney, advanced healthcare plan, healthcare agent, trusts, insurance, letter of last instruction, and easements. While the previous sentence has a lot of moving parts, having a team of professionals could aid in the process and make it easier. The team could include an attorney, accountant, financial planner, lender, extension educator, business consultant, and communication specialist.

The topic of estate transition is diverse, and it looks different for every operation, but starting the process is never the wrong step. This article only scratches the surface, but below are resources available to you to start.

University of Tennessee: Farmland Legacy- <https://farmlandlegacy.tennessee.edu>

University of Minnesota- <https://agtransitions.umn.edu>

Iowa State University- <https://www.extension.iastate.edu/bfc>

Table 1. Age Group Break Down of Total Producers for Southern Ag Today States

State	Total Producers	Percent of Producers in Age Group		
		<35	35-64	65 and Older
TX	402,876	6%	52%	41%
OK	124,743	9%	53%	37%
AR	67,425	9%	54%	36%
LA	42,551	8%	54%	38%
KY	119,132	10%	55%	35%
VA	67,798	8%	52%	41%
TN	107,817	7%	53%	39%
NC	72,479	9%	54%	38%
MS	52,025	7%	51%	42%
AL	62,777	8%	53%	39%
GA	67,082	7%	53%	40%
SC	38,097	8%	51%	41%
FL	79,253	7%	53%	40%

(Source: 2022 Ag Census)

HOT WEATHER MANAGEMENT

 University of Kentucky

Hosted By:
McLean County, Grayson County, Ohio County Cooperative Extension
David Fourqrean, Whitney L. Carman, Greg Comer

Guest speaker

MICHAEL CZARICK

UGA Extension Engineer



LOCATION: OHIO COUNTY EXTENSION OFFICE
1337 Clay St. Hartford, KY 42347

JULY | 26th | 2024

Breakfast: 7 AM, Program to Follow at 7:30 AM

Call to RSVP By July 19th.

McLean County : 270-273-3690

Grayson County: 270-259-3492



SCAN TO RSVP

 Cooperative Extension Service

HOW TO REMOVE A TICK SAFELY

UK Cooperative Extension Publication ENTFACT-618

STEP ONE

Use fine-tipped tweezers to grasp the tick as close to the skin's surface as possible. The goal is to remove the entire tick.

STEP TWO

Pull up with steady, even pressure. Do not twist or jerk the tick.

STEP THREE

Clean the bite area and your hands with rubbing alcohol, an iodine soap, or soap and water.

Identification of ticks is available through your local Cooperative Extension Service office.



Extension Office will be Closed:

July 4, 2024

Sept 2, 2024

Nov 5, 2024

Katie Hughes

Katie Hughes

UK-Union Co Extension

ANR Agent

270-389-1400

Katie.n.hughes@uky.edu

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